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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P03151/J	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/NZ03/00158	International filing date (<i>day/month/year</i>) 23 July 2003	(Earliest) Priority Date (<i>day/month/year</i>) 24 July 2002
Applicant JOHNSON, Garrick Ross		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
 - a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
 - b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
2. Certain claims were found unsearchable (See Box I).
3. Unity of invention is lacking (See Box II).
4. With regard to the title,
 - the text is approved as submitted by the applicant.
 - the text has been established by this Authority to read as follows:
5. With regard to the abstract,
 - the text is approved as submitted by the applicant
 - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is Figure No. 2
 - as suggested by the applicant.
 - because the applicant failed to suggest a figure
 - because this figure better characterizes the invention

INTERNATIONAL SEARCH REPORT

Australian Conv

International application No.

PCT/NZ03/00158

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: B25D 9/02, 9/04, E21B 1/24, 1/26, 1/30, 7/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT (B25D 9/02, 9/04, E21B 1/24, 1/26, 1/30, 7/24 and keywords: sonic drill, piston, reciprocate and like terms)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5222425 A (DAVIES) 29 June 1993 Column 4 line 49 - column 5 line 45	1 - 2, 5 - 11
X	US 5392865 A (PIRAS) 28 February 1995 Column 4 lines 10 - 54	1 - 2, 5 - 11
A	GB 2345931 A (BAKER HUGHES INCORPORATED) 26 July 2000 Figure 8, page 16 lines 14 - 29	1 - 11
D, A	US 5549170 A (BARROW) 27 August 1996 Abstarct	1 - 11

 Further documents are listed in the continuation of Box C See patent family annex

* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	"D"	document mentioned in the description

Date of the actual completion of the international search

18 November 2003

Date of mailing of the international search report

28 NOV 2003

Name and mailing address of the ISA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

JASON PREMNATH

Telephone No : (02) 6283 2127

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/NZ03/00158

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	5222425	AU	10078/92	CA	2058659	SE	9200001
		ZA	9110187				
US	5392865	AU	17287/92	CA	2069184	EP	0516561
		FI	922483	FR	2676953	JP	5146976
		ZA	9203479				
GB	2345931	BE	1013805	GB	2384016	GB	2384017
		GB	2384018	GB	2385080	GB	2385350
		GB	2385351	GB	2385618	IT	TO20000022
		US	6338390				
US	5549170	US	5800096				

END OF ANNEX

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